

ABSTRACT OF THE DISCLOSURE

The present invention describes in detail the construction and operation of a CMOS Active Pixel Image Sensor that consists of pixels formed by only two transistors. The sensor can be fabricated with very small pixel sizes, which have only two metal contacts in them, have in-pixel offset non-uniformity correction, and bootstrapped reset lines. These features are achieved by employing the transistor body effect as the main photo-generated charge sensing means. The bootstrapped reset lines allow the sensor to operate at low bias voltages. Additional embodiments of the invention include: single line for addressing the pixels, column-clamping circuits to prevent the forward biasing of pixel's p-n junctions and trench isolation to minimize the pixel size